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IMAGES IN CARDIOLOGY

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Evolving pneumopericardium

A 38-year-old man who was admitted with peptic ulcer developed sudden onset dyspnoea and chest pain associated with hypotension and tachypnoea. Precordial examination showed faint heart sound with succussion splash and metallic tinkling sounds. Chest radiography showed evidence of pneumopericardium (panel A); however, echocardiography was normal. A day later, his breathlessness worsened and a repeat chest radiography showed worsened pneumopericardium (panel B). There was no evidence of cardiac tamponade. In view of clinicoradiological findings, perforation of gastric ulcer into the pericardium was suspected. Upper gastrointestinal endoscopy showed a large gastric ulcer on the posterosuperior aspect of lesser curvature through which the beating heart could be seen. Biopsy from the ulcer margin showed non-malignant nature. The patient was managed by prompt surgery.

Gastropericardial fistula is associated with a mortality rate of >50%. Chest radiography reveals the diagnosis in most cases showing a rim of air and a fine white line representing pericardium. At the base of the heart, the superior surface of the diaphragm may be outlined by air, which has been described as the “continuous diaphragm sign”. Endoscopy must be used with caution as insufflation of air may exacerbate cardiac tamponade, if present. Early detection is essential for effective management. Cardiac tamponade, if present, requires early pericardial decompression. Surgery is the definitive treatment of this condition, irrespective of the cause and location of the fistula.

Anita Sharma, Sumeet Agrawal, Mudit Gupta
sumeet.drsumeetagrwal@gmail.com



Panel A Early pneumopericardium: a translucent area (air) separating the pericardium (seen as a fine white line) from the cardiac shadow.



Panel B Fully evolved pneumopericardium with a translucent area surrounding the entire cardiac silhouette.